

Remarks

Applicants respectfully request reconsideration of the present U.S. Patent application as amended herein. Claims 1, 6, 11, 16 and 35 have been amended. No claims have been added or canceled herein. Thus, claims 1, 3-6, 8-11, 13-33 and 35-40 are pending.

Claim Rejection - 35 U.S.C. § 112, Second Paragraph

Claim 35 was rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. Specifically, the Office Action stated:

Lines 8-9 of claim 35 recite limitations that have already been recited in the claim.

See page 2.

Claim 35 has been amended to remove the redundant material. Accordingly, Applicants request that the rejection of claim 35 under 35 U.S.C. § 112, Second Paragraph be withdrawn.

Claim Rejections - 35 U.S.C. § 102(e)

Claims 35-37 were rejected as being anticipated by U.S. Patent No. 6,266,341 issued to Surprenant, et al. (*Surprenant*). For at least the reasons set forth below, Applicants submit that Surprenant does not anticipate claims 35-37.

Claim 35 recites:

a plurality of ingress interface cards coupled to the backplane to receive multiple channels of network traffic from external sources, to receive one or more channels of data according to a time division

multiplexed (TDM) protocol and one or more channels of data according to a second protocol, to convert the TDM data and the data according to the second protocol to an internal cell format, and to route the channels of data over the backplane using the internal cell format to one or more egress interface cards coupled to the backplane

Thus, Applicants claim conversion of TDM data and other protocol data to an internal cell format for transmission over a backplane.

The Office Action states:

... and to route the channels of data over the backplane using a single format (see column 8, lines 35-44, which describes that the data are transmitted in TDM frames)...

See page 3. However, the cited passage in *Surprenant* discloses communication of TDM data over a bus, but not conversion of TDM data and other protocol data to an internal cell format for transmission. Therefore *Surprenant* does not disclose the invention as claimed in claim 35.

Claims 36 and 37 depend from claim 35. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 36 and 37 are not anticipated by *Surprenant* for at least the reasons set forth above.

Rejection of Claims 1, 3-5, 11, 13-20 and 23 Under 35 U.S.C. § 103(a)

Claims 1, 3-5, 11, 13-20 and 23 were rejected as being unpatentable over U.S. Patent No. 6,266,341 issued to *Surprenant*, et al. (*Surprenant*) in view of U.S. Patent No. 6,226,287 issued to Brady (*Brady*).

The Office Action states:

... the examiner concedes that the apparatus of *Surprenant* et al. contains a plurality of buses, the examiner has relied on a single bus (TDM Bus, see Figure 3, #78) in making his rejection. The other buses are therefore irrelevant as then have not been relied on as a basis for rejection of the

claims. Furthermore, the TDM bus cited does use a single protocol (see column 8, lines 35-44, which describes that the data are transmitted in TDM frames).

See page 19. Applicants acknowledge this basis for rejection. However, the claims recite ***converting TDM data*** to an internal cell format as well as converting second protocol data traffic to the internal cell format. TDM refers to time switching and does not necessarily require a standard format for the data in the different time slices.

Claim 1 recites:

a backplane to carry data traffic of multiple types using a single, ***internal cell format***; and
a plurality of interface cards coupled to the backplane, the interface cards coupled to receive multiple channels of network traffic from external sources, the plurality of interface cards to receive one or more channels of data according to a time division multiplexed (TDM) protocol and one or more channels of data according to a second protocol, the interface cards to ***convert data received according to the TDM protocol and the data received according to the second protocol to the internal cell format*** and to route the channels of data over the backplane using the single internal cell format to one or more predetermined interface cards coupled to the backplane within the network switch.

Thus, Applicants claim converting incoming data to a single internal cell format for transmission over a backplane.

Neither *Surprenant* nor *Brady* teach or suggest conversion of TDM and data according to a second protocol to a single, internal cell format to route channels of data including TDM data and a second protocol within a switch. *Surprenant* discloses bridging traffic according to multiple protocols. See Abstract. However, *Surprenant* discloses a separate bus for each protocol type. Specifically, *Surprenant* discloses

...communications system 50 includes at least three (3) separate types of busses, e.g., TDM bus 78, packet bus 80A (or 80B), etc., and control bus 92, etc.

See col. 10, lines 10-14. Therefore, *Surprenant teaches away* from the invention as claimed in claim 1.

Brady is cited to teach receiving multiple protocols on a single card. However, *Brady* does not teach or suggest transmitting data received according to multiple protocols over a backplane using a single format. Therefore, *Brady* does not cure the deficiencies of *Surprenant* and no combination of *Surprenant* and *Brady* can teach or suggest the invention as claimed in claim 1.

Claims 3-5, 20 and 23 depend from claim 1. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 3-5, 20 and 23 are not rendered obvious by *Surprenant* and *Brady* for at least the reasons set forth above.

Claim 11 recites:

... converting the TDM data and the second protocol data to an internal cell format...

Similarly, claim 16 recites:

... means for converting the TDM data and the second protocol data to an internal cell format...

As discussed above, Applicants claim converting incoming data.

Because *Surprenant* discloses different buses for different types of traffic, *Surprenant* cannot teach or suggest converting TDM data and the second protocol data to an internal cell format. *Brady* is cited to teach receiving multiple protocols on a single card. However, *Brady* does not teach or suggest converting TDM data and the second protocol data to an internal cell format. Therefore, *Brady* does not cure the deficiencies

of *Surprenant* and no combination of *Surprenant* and *Brady* can teach or suggest the invention as claimed in claims 11 and 16.

Claims 13-15 depend from claim 11. Claims 17-19 depend from claim 16. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 13-15 and 17-19 are not rendered obvious by *Surprenant* and *Brady* for at least the reasons set forth above.

Rejection of Claims 6, 8-10 and 26 Under 35 U.S.C. § 103(a)

Claims 6, 8-10 and 26 were rejected as being unpatentable over *Surprenant* in view of *Brady* and further in view of U.S. Patent No. 5,953,329 issued to Degges, et al. (*Degges*).

Claim 6 recites:

a backplane interface to transmit and receive data over a backplane using a single, internal cell format;
...
conversion circuitry to convert the TDM data and the second protocol data to the internal cell format; and

Thus, Applicants claim a circuit that converts TDM data and other protocol data to an internal cell format for transmission over a backplane.

As mentioned above, no combination of *Surprenant* and *Brady* teaches or suggests conversion of TDM data and other protocol data to an internal cell format. *Degges* is cited to teach a time slot manager. However, whether or not *Degges* discloses a time slot manager, *Degges* does not cure the deficiencies of *Surprenant* and *Brady*. Therefore, no combination of *Surprenant*, *Brady* and *Degges* can teach or suggest the invention as claimed in claim 6.

Claims 8-10 and 26 depend from claim 6. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 8-10 and 26 are not rendered obvious by *Surprenant*, *Brady* and *Degges* for at least the reasons set forth above.

Rejection of Claims 21, 22, 24, 25, 29, 31 and 32 Under 35 U.S.C. § 103(a)

Claims 21, 22, 24, 25, 29, 31 and 32 were rejected as being unpatentable over *Surprenant* in view of *Brady* and further in view of U.S. Patent No. 6,407,997 issued to DeNap, et al. (*DeNap*). Claims 21, 22, 24, 25 and 29 depend from claim 1. Claim 31 depends from claim 11 and claim 32 depends from claim 16. *DeNap* is cited to teach used of optical signals. However, *DeNap* does not cure the deficiencies of *Surprenant* and *Brady*. Therefore, no combination of *Surprenant*, *Brady* and *DeNap* teaches or suggests the invention as claimed in claims 21, 22, 24, 25, 29, 31 and 32.

Rejection of Claims 27, 28 and 30 Under 35 U.S.C. § 103(a)

Claims 27, 28 and 30 were rejected as being unpatentable over *Surprenant* in view of *Brady* and further in view of *Degges* and *DeNap*. *Degges* discloses a switching matrix for T1 frames. See col. 4, lines 5-10. *Degges* discloses use of only T1 frames. Therefore, *Degges* does not teach or suggest conversion of TDM data and second protocol data to an internal cell format. *DeNap* is cited to teach used of optical signals. T1 frames can be carried as optical signals. Therefore, no combination of *Surprenant*, *Brady*, *Degges* and *DeNap* teaches or suggests the invention as claimed in claims 27, 28 and 30.

Rejection of Claim 33 Under 35 U.S.C. § 103(a)

Claim 33 was rejected as being unpatentable over *Surprenant* in view of *Brady* and further in view of U.S. Patent No. 5,541,921 issued to Swenson, et al. (*Swenson*). *Swenson* is cited to teach a plurality of buffers to interface a backplane. However, *Swenson* is not cited to teach, nor does *Swenson* teach or suggest conversion of TDM traffic and second protocol data to an internal cell format. Therefore, *Swenson* does not cure the deficiencies of *Surprenant* and *Brady*. Accordingly, no combination of *Surprenant*, *Brady* and *Swenson* can teach or suggest the invention as claimed in claim 33.

Rejection of Claim 34 Under 35 U.S.C. § 103(a)

Claim 34 was rejected as being unpatentable over *Surprenant* in view of *Brady* and further in view of *Degges* and *Swenson*. Claim 34 was previously canceled. Therefore, the rejection of claim 34 is moot.

Rejection of Claims 38-40 Under 35 U.S.C. § 103(a)

Claims 38-40 were rejected as being unpatentable over *Surprenant*. Claims 38-40 depend from claim 35, which has been discussed above as not being anticipated by *Surprenant*. The Office Action alleges that the various limitations of claims 38-40 would have been obvious in view of *Surprenant*. Applicants respectfully disagree that the limitations of claims 38-40 would have been obvious in view of *Surprenant*. As discussed above, *Surprenant* fails to teach or suggest conversion of TDM data and other protocol data to an internal cell format for transmission over a backplane. Therefore, *Surprenant* cannot teach or suggest the invention as claimed in claims 38-40.

Conclusion

For at least the foregoing reasons, Applicants submit that the rejections have been overcome. Therefore, claims 1, 3-6, 8-11, 13-33 and 35-40 are in condition for allowance and such action is earnestly solicited. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the present application. Please charge any shortages and credit any overcharges to our Deposit Account number 02-2666.

Respectfully submitted,
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